558719

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 9 December 2004 (09.12.2004)

PCT

(10) International Publication Number WO 2004/107147 A2

(51) International Patent Classification7: G06F 3/00, 3/033

(21) International Application Number:

PCT/IB2004/050760

(22) International Filing Date: 24 May 2004 (24.05.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 03101586.0

2 June 2003 (02.06.2003) EI

(71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

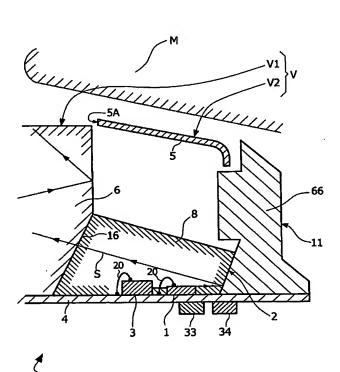
(75) Inventors/Applicants (for US only): DE SAMBER, Marc, A. [BE/BE]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). VRANKEN, Roger, A. [BE/BE]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). WEEKAMP, Johannus, W. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(74) Agent: ROLFES, Johannes, G., A.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: OPTO-ELECTRONIC INPUT DEVICE, METHOD OF MANUFACTURING SUCH A DEVICE AND METHOD OF MEASURING THE MOVEMENT OF AN OBJECT BY MEANS OF SUCH A DEVICE



(57) Abstract: The invention relates to an opto-electronic input device (10), wherein the input is formed by detected movements of an object (M), which opto-electronic input device is provided with an optical module (11) comprising at least one laser (1) mounted on a carrier plate (4), which laser emits a radiation beam (S) that is guided to a plate (V) close to the object (M) and, after reflection therefrom, causes a change in the resonant cavity of the laser (1) which is representative of the movement of the object (M), and which is measured within the module (11). According to the invention, the plate (V) close to the object (M) comprises, within a projection of the object (M), a first portion (VI) through which the beam (S) can pass and which has a fixed position with respect to the carrier plate (4), and a second portion (V2) which is movable in a direction perpendicular to the carrier plate (4) and which comprises signal means which, when they are moved, provide a signal that is observable by a user of the device (10). In this way, the device (10) provides feedback to a human user through his tactile sense and preferably also through his auditory sense. The invention also comprises a method of manufacturing such a device and a method of inputting the movement of an object (M) using such a device.



1Ó

ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM,

ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.